

ABSTRACT OF THE DISCLOSURE

A write cache that reduces the number of memory accesses required to write data to main memory. When a memory write request is executed, the request not
5 only updates the relevant location in cache memory, but the request is also directed to updating the corresponding location in main memory. A separate write cache is dedicated to temporarily holding multiple write requests so that they can be organized for more efficient transmission to memory in burst transfers. In one embodiment, all writes within a predefined range of addresses can be written to memory as a group.
10 In another embodiment, entries are held in the write cache until a minimum number of entries are available for writing to memory, and a least-recently-used mechanism can be used to decide which entries to transmit first. In yet another embodiment, partial writes are merged into a single cache line, to be written to memory in a single burst transmission.